

**Amendments to the Claims:**

**This listing of claims will replace all prior versions and listing of claims in the application.**

1. (currently amended) A radiation resistant *Deinococcus radiodurans* bacterium comprising a nucleic acid encoding at least one *mer* operon capable of detoxifying at least one heavy metal when expressed, wherein said *Deinococcus* can grow in the presence of continuous ionizing radiation exposure.

2. (currently amended) A radiation resistant *Deinococcus radiodurans* bacterium of claim 1, wherein said *Deinococcus* bacterium is non-pathogenic and can grow in the presence of continuous ionizing radiation of up to about 60 Gy/hour.

3 to 5. (cancelled)

6. (currently amended) A radiation resistant bacterium of claim [[4]] 1, wherein the at least one heavy metal is selected from the group consisting of chromium, lead, arsenic, zinc, cadmium, cobalt or mercury.

7 to 11. (cancelled)

12. (currently amended) A radiation resistant bacterium of claim 1, wherein the bacterium has been engineered to express at least one protein encoded by a nucleic acid other ~~that~~ than the *mer* operon.

13 to 24. (cancelled)

25. (previously amended) A bioremediation composition comprising the *Deinococcus* bacterium of claim 1.

26. (original) A bioremediation composition of claim 25 further containing an agent selected from the group consisting of a film forming agent and a nutrient agent.

27. (previously amended) A bioremediation composition of claim 25 which is formulated for controlled release.

28. (previously amended) A bioremediation composition of claim 26 which is formulated for controlled release.

29 to 41. (cancelled)

42. (currently amended) The radiation resistant *Deinococcus radiodurans* bacterium of claim 1, wherein said *Deinococcus* is *Deinococcus radiodurans* (strain ATCC BAA-816).

43. (currently amended) The radiation resistant *Deinococcus radiodurans* bacterium of claim 1, wherein the *mer* operon is constitutively expressed.
44. (currently amended) The radiation resistant *Deinococcus radiodurans* bacterium of claim 1, wherein at least one *mer* operon is integrated into said *Deinococcus* bacterium genome.
45. (currently amended) The radiation resistant *Deinococcus radiodurans* bacterium of claim 1, wherein said *Deinococcus* grows in the presence of up to 100  $\mu$ M mercury.
46. (currently amended) The radiation resistant *Deinococcus radiodurans* bacterium of claim 1, wherein the nucleic acid encoding the *mer* operon is expressed from an autonomously replicating plasmid.
47. (currently amended) The radiation resistant *Deinococcus radiodurans* bacterium of claim 46 wherein said autonomously replicating plasmid is pMD66-~~or a derivative thereof~~.
48. (currently amended) The radiation resistant *Deinococcus radiodurans* bacterium of claim 1, wherein the nucleic acid encoding the *mer* operon is ~~integrated~~ integrated in a plasmid.
49. (currently amended) The radiation resistant *Deinococcus radiodurans* bacterium of claim 48, wherein the plasmid is pMD727-~~or a derivative thereof~~.
50. (currently amended) The radiation resistant *Deinococcus radiodurans* bacterium of claim 48, wherein the plasmid is pMD728-~~or a derivative thereof~~.
51. (currently amended) The radiation resistant *Deinococcus radiodurans* bacterium of claim 48, wherein the plasmid is pMD731-~~or a derivative thereof~~.
52. (previously presented) A radiation resistant *Deinococcus radiodurans* bacterium comprising a nucleic acid encoding at least one *mer* operon capable of detoxifying at least one heavy metal when expressed, wherein said *Deinococcus* can grow in the presence of continuous ionizing radiation exposure.
53. (previously presented) A radiation resistant, non-pathogenic *Deinococcus radiodurans* bacterium comprising a nucleic acid encoding at least one *mer* operon capable of detoxifying at least one heavy metal when expressed, wherein said *Deinococcus* can grow in the presence of continuous ionizing radiation exposure.